

RF Exposure

**CFR 47 FCC Part 1.1310**

**1. 60.3 – 63.6 GHz :**

EIRP = 9.9 dBm = 97.7 mW ( see test report  
With additional 10% tolerance = 107.5 mW

$$\text{Power density } P \text{ (mW/cm}^2\text{)} = P_T / 4\pi r^2$$

r = 20cm recommend separation distance

$$P_T = 107.5 \text{ mW}$$

$$P = 0.021 \text{ mW/cm}^2$$

$$\text{Limit} = 1 \text{ mW / cm}^2$$

$$\% \text{ of limit} = 0.11 / 1 = 2.1\%$$

**2. 2412 – 2462 MHz**

EIRP = 51.17 (taken from FCC ID: 2AHMRESP12S certified module)

$$\text{Power density } P \text{ (mW/cm}^2\text{)} = P_T / 4\pi r^2$$

r = 20cm recommend separation distance

$$P_T = 51.17 \text{ mW}$$

$$P = 0.010 \text{ mW/cm}^2$$

$$\text{Limit} = 1 \text{ mW / cm}^2$$

$$\% \text{ of limit} = 0.11 / 1 = 1.0\%$$

**3. Combined total**

Combined total = 2.1 + 1.0 % = 3.1% of limit.

Result = Exempt

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**TABLE 1 TO §1.1310(E)(1)—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(i) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
<b>(ii) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30